ROBISON'S MONARDELLA
Monardella robisonii Epling

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Management Status: Federal: USFWS Species of Concern; BLM Sensitive
California: S2.3, G2 (CDFG, 1998)
CNPS: List 1B, RED code 3-1-3 (Skinner and Pavlik, 1994)

General Distribution:

Robison's monardella is apparently endemic to the immediate vicinity of the Little San Bernardino Mountains (Munz, 1959; 1974), in and around Joshua Tree National Park (JTNP), and is most commonly reported in the vicinity of Key's Ranch, the type locality. It is likewise apparently endemic to California and specifically to the WMPA. The only populations known from outside JTNP are on the north side of Yucca Valley and near Sheep Hole Pass, northeast of Twentynine Palms.

As with many poorly understood species, there are also unsubstantiated reports of Robison's monardella far from its few areas of known occurrence. There is a report from the Granite Mountains north of Amboy (Munz, 1968), but that location was not reported by Munz subsequently (1974), nor is it reported in the CNPS Inventory (Skinner and Pavlik, 1994). A letter in the files of the California Dept. of Fish and Game (R. York, 4 Feb. 1987) indicates that the collections from the Granite Mountains, filed in the herbarium at UC Santa Barbara, had been re-identified by Claire Hardham *as M. linoides*, though the plants were apparently thought to be possible hybrids. The Jepson Manual (Hickman, 1993) suggests that this species may also occur in Baja California, but I know of no other reports from that area and do not know the basis for this suggestion.

Distribution in the West Mojave Planning Area:

Robison's monardella is endemic to the southern part of the WMPA, primarily in the Little San Bernardino Mountains. See discussion under general distribution.

Natural History:

Robison's monardella is a perennial herb or weak subshrub, very similar to the widespread narrow-leaved monardella (*M. linoides)*, except that the stems and leaves are covered with longer spreading (instead of short and appressed) hairs. The similarity of the two species has long been noted (Jaeger, 1940), but their precise relationships have not been studied. The flowers, as in all monardella species, are nearly regular and are clustered into compact heads. Based on specimens at UCR, the individual flowers are white to lavender or pale rose, sometimes with a darker stripe down center of each corolla lobe. The flower heads are subtended by subscarious ovate bracts, which are typically pale in color. The leaves are narrowly lanceolate and opposite.

The reported differences between Robison's monardella and narrow-leaved monardella in involucral bract shape and texture and in overall involucre form (Hickman, 1993) are not apparent. Careful study of a series of specimens of both species at UCR

revealed no consistent differences, except perhaps a tendency for the involucral bracts of Robison's monardella to be a bit paler in color.

The species was described, very briefly, in 1935 from specimens collected on 20 April 1934 by C. Epling and Wm. Robison (Epling, 1935). Since that time the species has gone virtually unstudied and the publications mentioning it are predominantly floristic in character. The most recent, and only, monograph of the genus *Monardella* (Epling, 1925) was prepared 10 years before this species was described, and hence there has been no opportunity for careful revision based on modern methods and more extensive collection.

This species is very doubtfully distinct from narrow-leaved monardella (*M. linoides)*, and would perhaps be better treated as a subspecies of that plant. It is noteworthy that in his monograph Epling (1925; pg. 6) notes that "The pubescence is of value in distinguishing subspecies but by reason of its response to the environment must be used with care as a basis for specific differentiation." He went on to note that leaf hairs may point upward or downward on different individuals in one population or even on different parts of one individual. Narrow-leaved monardella was specifically noted as a plant with variable leaf hair characteristics. It would appear that by 1935 Epling had forgotten his own recommendation, when he erected *M. robisonii* based entirely on pubescence type (Epling, 1935). As noted above, except for the longer spreading rather than appressed hairs, Robison's monardella appears indistinguishable from narrow-leaved monardella.

Pollinators, germination requirements, seed longevity, and most other aspects of the biology of Robison's monardella are unknown. It is possibly pollinated by a long-tongued bee or a butterfly, based on flower morphology. Narrow-leaved monardella has been observed to be visited by large bees (M. Provance, pers. comm.) and the pollinators for Robison's monardella are doubtless similar. The species is a perennial herb or weak subshrub, probably relatively long-lived, and seems to reproduce primarily by seed. Rhizomes are reported to be present, but are apparently poorly developed.

Jaeger (1940) reports that this species is "aromatic", and the type description (Epling, 1935) likewise says that the plant is strongly scented ("odoratissima") but this needs to be confirmed. Jaeger also says *M. linoides* is strongly scented, whereas in my experience it is hardly scented at all. Jaeger may have been generalizing from other species of *Monardella*, which typically do have a strong sweet-minty scent. It is possible that Epling (1935) was doing the same. If Robison's monardella is truly aromatic, then this could represent an additional difference from *M. linoides*.

The chromosome number is 2n=21, which is the same as that reported for many other *Monardella* species which have been counted (Munz, 1968; Raven, Kyhos and Hill, 1965). Unfortunately, the chromosomes of *M. linoides* seem not yet to have been counted. A chromosome count of a different number would be good evidence that the two taxa are distinct species.

Habitat Requirements:

This plant seems to be entirely restricted to rocky granitic slopes at moderate elevations, 3800-4500 ft. (1160-1373 m; Munz, 1959) or 3600-4900 ft. (1100-1500 m; Hickman, 1993) on the southern Mojave Desert. Most specimens are from among granitic boulders, and some authors report it from "among rocks" (Jaeger, 1940; Munz, 1959).

Likewise, the only ecological observations included in the original description are that it was growing "among boulders and in crevices" (Epling, 1935). The general habitats occupied are mostly in pinyon-juniper woodland, but also in creosote bush scrub and Joshua tree woodland.

Population Status:

Robison's monardella populations are apparently stable, although the species is poorly known and little studied. The fact that most of the known distribution is within the boundaries of JTNP, and thus not subject to the standard list of threats and disturbances, suggests that this plant is already well protected.

This plant is apparently naturally very rare and there is no evidence that any human activity has had a significant impact on the populations to date. It appears that it is very specific in its habitat requirements and has never spread beyond a very limited area.

Threats Analysis:

Threats to Robison's monardella appear to be slight or non-existent. The only potential threat is from the numerous rock climbers that use the granitic boulder piles around Key's Ranch, its preferred habitat. It is conceivable that plants could be damaged or destroyed as people climb up through occupied cracks, or that plants at the bases of favored boulders could be trampled. The extent of any threat from climbers is undocumented, but appears minor.

Biological Standards:

This species needs additional study, but is probably already adequately protected. The extent of any potential threat from rock climbers should be examined, as should the taxonomy of the plant.

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